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교육학석사학위논문

Intelligibility of and Attitude toward World Englishes

Judged by Korean EFL High School Students

: Focusing on Hindi and Chinese Accents of English

한국 고등학생의 세계 영어에 대한

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Intelligibility of and Attitude toward World Englishes
Judged by Korean EFL High School Students
: Focusing on Hindi and Chinese Accents of English

by

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ABSTRACT

This study investigates intelligibility of Hindi- and Chinese-accented English by Korean high school students and their attitude toward the English varieties' accents from an English as a Lingua Franca (ELF) perspective. With globalization, English in international interactions is now used more between non-native English learners than between L1 speakers and non-native speakers. In this ELF circumstance, a lot of research focusing on the intelligibility principle and language attitude has been conducted. Nevertheless, there has been little research putting focus on intelligibility of non-native English speeches by Korean learners and their attitude toward the speeches. As a result, three research questions were developed as follows: (a) Is there a significant difference between intelligibility of the two different L1-accented speeches (Hindi-accented and Mandarin-accented speech) for Korean learners of English?; (b) What are the factors that impeded the intelligibility?; (c) What attitude do Korean students have toward the two different L1-accented speeches?

In order to answer these questions, an intelligibility test and an attitude survey were conducted with a total of 42 Korean high school students and 12 native speakers of English. They were divided into two groups and participated in a word transcription task for the intelligibility test and an attitude survey. In the intelligibility test, listeners transcribed excerpts read by each speaker from India or China. Intelligibility was determined by the accuracy of their transcriptions of words. After the intelligibility test, they were asked to

show their attitude toward the accent through the questionnaire. The tasks were then followed by a post interview which was performed to get a deeper understanding of the errors committed by the participants.

The findings of the study show that for the Korean learners, the Mandarin-accented English was significantly less intelligible than the Hindi-accented English. The error analysis presented that word familiarity and accent familiarity are closely related with intelligibility. Analyses of the errors also revealed mixed results about the Lingua Franca Core (Jenkins, 2000). The Korean learners' attitude toward the two accents yielded a disfavor rating for both accents. In contrast, the native speakers showed more positive attitude toward the Hindi-accented English than the Mandarin-accented English, which is also found to be related with accent familiarity factor.

In conclusion, in order to improve intelligibility of the two accent varieties and have generous attitude toward a variety of Englishes in the ELF context on the part of the Korean students, English teaching needs to not only combine listening tasks with vocabulary building, but also, more importantly, raise awareness of a variety of Englishes and introduce phonological features of them.

Key words: ELF, Intelligibility, Language Attitude, Korean high school students

Student Number: 2012-23487

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CHAPTER 1.

INTRODUCTION

This chapter introduces the motivation and purpose of the current study. Section 1.1 explains the purpose of the study, and Section 1.2 presents the research questions. Section 1.3 outlines the organization of the thesis.

1.1 Purposes of the Study

With globalization, English has been noticeably used as a lingua franca in intercultural communication. In other words, it allows for communication not only between native speakers and nonnative speakers, but also between non-native speakers themselves. According to Crystal (2008), the number of non-native speakers including the Outer and the Expanding Circle (about 1.93billion) was at almost five times that of native speakers (about 400 millions) as of 2008. In this circumstance, it is natural to expect that more interactions will occur between non-native English learners than between L1 speakers and non-native speakers.

This rapid spread of English use among non-native English learners has led to creation of various terms referring to this phenomenon. Among them, the term ‘English as a Lingua Franca(ELF)’ is said to precisely capture the widespread use of English in the Expanding Circle which includes Korea. Originally, Jenkins (2003) used ELF as a new term to describe the speakers of the Expanding Circle. Walker (2010) also suggested that ELF refers fundamentally to interaction between non-native speakers. Although ELF does not exclude native speakers, the members of this community are predominantly non-native speakers.

This ELF in its current global manifestation has led to the paradigm shift in teaching principle in pronunciation. Before the 1960s, the predominant paradigm in pronunciation teaching was the native principle, in which learners model a standard dialect from the UK or America. However, countless studies have proven that ‘a native-like accent is impossible unless first exposure is quite early, probably around the age of six’ (Larsen-Freeman & Long, 1991, p.158). Considering the issue above, the ‘Intelligibility Principle’ (Smith, 2011) was introduced, which is based on the idea that it is not reasonable to aim for the acquisition of native-like pronunciation, but instead it is more reasonable to acquire intelligible pronunciation due to high chances of communicating with non-native speakers of English on the part of learners. In terms of the specific teaching guide focusing on the Intelligibility Principle, Jenkins (2000, 2002, 2009) proposed the notion of “Lingua Franca Core” (LFC), which consists of a set of features important for intercultural communication, especially among speakers of English from the Expanding Circle countries (Kachru, 1985). Behind this backdrop of the increase of English use between non-native speakers and

resulting paradigm shift in pronunciation teaching and the growing interest in intelligibility issues which are one of the topics of the current study, a variety of research related have been conducted. Orikasa (2016) suggests that recent studies concerning non-native speakers and intelligibility can be broadly categorized into several types.

Firstly, many studies have tried to examine which elements impeded or facilitated intelligibility of non-native speakers' English speeches by native speakers. Gass and Veronis (1984) found that native English speakers' 'topic familiarity' with non-native accents (Arabic and Japanese) had an influence on comprehension of L2 speech. And Munro and Derwing (1995,1997) examined the relationships between accent, intelligibility, and comprehensibility of L2 speech of speakers from five different nationalities. The research showed that foreign accent did not necessarily impede the comprehensibility of L2 speech.

Secondly, a lot of studies have highlighted intelligibility of different varieties of English in the Inner and the Outer Circle contexts rated by L2 learners. Tauroza and Luk (1997) investigated how Hong Kong learners of English differently comprehended Hong Kong-accented versus Received Pronunciation(RP)-accented English. The results revealed that there was no significant difference in L2 listeners' comprehension of the two varieties. Kirkpatrick et al (2008) examined the international intelligibility of English speakers rated by educated Hong Kong speakers in Singapore and Australia. They found that the overall average intelligibility score was higher than the criterion of 80% correct responses, showing that Hong Kong English was highly intelligible and acceptable in contexts outside Hong Kong.

Although the research on non-native speakers and intelligibility has been actively discussed and studied, studies on intelligibility between non-native speakers of English, especially in Korean contexts have been hardly done.

Another topic which the current study puts focus on is language attitude. There has been a variety of research concerning Korean learners' language attitude toward various L1-accented English, which generally show that native and standard speakers were more favorably rated than other various English accents (Chiba et al., 1995; Dalton-Puffer et al., 1997; Jenkins, 2007; Major et al., 2005).

As for the English varieties' accents, the current study opts for two variations of English speech: Indian English and Chinese English. Kachru (2005) calculated that English users in India and China alone approximate 533 million, a population of larger than the sum of English speakers from the U.S., the U.K., and Canada combined. They are also reported to be the countries which are major commercial partners with Korea. In 2015, for example, India and China ranked at the first and the seventh trading partner, respectively, of Korea (International Merchandise Trade Statistics, 2015). Considering this, Korean learners are highly likely to use English for business interactions with those from India and China in the future. In short, large population of English users and high potential for Korean learners to meet in business interactions led to the selection of the two countries.

Taken together, previous research on non-native speakers' intelligibility and language attitude has offered constructive and meaningful information about the intelligibility of and the attitude toward varieties of English in varying contexts. Nonetheless, few research has conducted studies about intelligibility of various L1-accented English speeches by Korean

learners' from the ELF perspective with the focus on the LFC. Moreover, since it was found that intelligibility of a linguistic variety and attitudes towards that variety are linked (Wolff, 1959; Boets & De Schutter, 1997; Giles & Niedzielski, 1998), it is meaningful to investigate the two sides in the same study.

To address this lack, this study aims to examine intelligibility of Hindi- and Chinese-accented English by Korean high school students and their attitude toward the English varieties' accents from an English as a Lingua Franca (ELF) perspective.

1.2 Research Questions

This study intends to investigate intelligibility of Hindi- and Chinese-accented English by Korean high school students and their attitude toward the English varieties' accents from an English as a Lingua Franca (ELF) perspective. To deal with those issues, the research questions below were developed to guide the present study.

1. Is there a significant difference between intelligibility of Hindi- and Chinese-accented English by Korean high School students?
2. What are the factors that impeded the intelligibility?
 - a. Which word is mistaken and mistranscribed as?

- b. What are the reasons for the frequent errors?
- 3. What attitude do Korean learners have toward the two different L1-accented speeches?

1.3 Organization of the Thesis

The present study consists of five chapters. Chapter 1 introduces the purpose of the current study and presents the research questions. Chapter 2 presents an overview of the literature review relevant to this study. In chapter 3, methodology of the study is explained with how this research was designed and conducted in detail. Chapter 4 presents the results and discusses the research findings. Finally, Chapter 5 concludes the research with the summary of the major findings and the pedagogical implications of the present study and the suggestions for further studies.

Chapter 2.

LITERATURE REVIEW

This chapter consists of the literature review of the related topics of the current study. Section 2.1 discusses the concept of English as a Lingua Franca (ELF) and Section 2.2 explains the features of Lingua Franca Core (LFC). Phonological characteristics of Indian English and Chinese English are dealt with in Section 2.3. In Section 2.4, the definition and the measurement of intelligibility are discussed and Section 2.5 explains research related to language attitude.

2.1 English as a Lingua Franca (ELF)

The phenomenon of the widespread use of English worldwide has produced varying terms, such as global Englishes (Pennycook 2007), global language (Crystal, 1997), world English(WE) (Jenkins 2003/2009; Kachru 1985,1990,1992,1995; Kirkpatrick 2007; Smith (ed.) 1987; Smith and Forman(eds) 1997; Stevens 1982), English as an international language (EIL) (Jenkins 2000; Smith (ed.) 1983; Stevens 1992) or international English (Trudgill and Hannah 1985) and English as a lingua franca (ELF) (House 2003; Jenkins

1998, 2000, 2002, 2007; B. Kachru 1996; Seidhofer 2003, 2005)

Among them, the term ‘English as a lingua franca (ELF)’ is closely related with the current study. Although both the notions of World Englishes(WE) and ELF are by nature highlighting the ownership of the second and the foreign English speakers, WE is said to be more suitable for learners in the Outer circle. Kirkpatrick (2007) insisted that English has already been institutionalized for intraethnic communication through codification and standardization for learners in the Outer circle (e.g., Nigeria, India Singapore). Jim Chan (2014) pointed out in his article that WE research has mainly been associated with describing linguistic features of English in the Outer circle (e.g., Indian English in Sailaja 2009; Singapore English in Deterding 2007; Philippine English in Bautisa and Bolton 2008) and Africa.

On the other hand, the ELF orientation puts more emphasis on enhancing intelligibility in the communication among non-native speakers from all the three circles, placing an additional focus on non-native speakers of varying first languages from the Expanding Circle (Jenkins et al, 2011). Seidhofer (2004) also pointed out that “English used in the expanding circle between L2 users captures ELF in its purest form”. Since the current study investigates intelligibility for Korean learners who belong to the Expanding Circle of non-native English speeches, it is reasonable that the present study is more closely related to the ELF perspective than any other terms.

2.2 Lingua Franca Core(LFC)

In terms of a specific pronunciation alternative related with the ELF approach, Jenkins (2000) proposed the Lingua Franca Core(LFC) identifying the phonological features that are essential for international intelligibility. Based on her empirical investigation of students from various international backgrounds, she proposed that the following features of pronunciation are crucial in the LFC:

- all the consonants , except /θ/ and /ð/
- initial consonant clusters
- vowel length distinctions
- the mid-central vowel
- nuclear stress

On the other hand, the following phonological features of pronunciation allow for individual variations, since they do not cause loss of intelligibility, so they can be excluded from the LFC:

- /θ/ and /ð/
- final consonant clusters
- vocalized L

- individual vowel quality
- reduced vowels
- lexical stress
- intonational tones
- rhythm

Regarding suprasegmental sounds, Jenkins (2000) argued that lexical stress hardly causes intelligibility problems for NNS-NNS interactions and that suprasegmental rules concerning lexical stress and intonational tones are too complicated to teach. She believed that the only suprasegmental that should be included in the LFC is nuclear stress revealing contextual information.

Jenkins' LFC has received considerable criticisms over its unnaturalness (Sobkoviak, 2005), limited practicality (Doel, 2010), and heavy bias toward L1 users' phonetic preference (Scheuer, 2005). Notwithstanding those criticisms, the LFC have been proved its usefulness in a variety of contexts regarding its learnability (Graddol, 2006), manageability (Seidhofer, 2004), attainability (Walker, 2010; Matsumoto, 2011). Until recently, many other scholars have continued to prove its usefulness through their research.

Deterding (2011)'s study offered empirical evidence in favor of the LFC proposals for pronunciation teaching. Analyzing a conversation between two Chinese students, he found that nearly all the problems were caused by consonant substitutions. It was also revealed that voiceless sound [θ] could be pronounced as [t], [s], or [f] without any loss of

intelligibility. Furthermore, the finding showed that variation in lexical stress caused no misunderstandings.

On the other hand, there have also been research findings raising doubts about validity of the LFC. George (2013) conducted a qualitative study of the intelligibility of /b/ and /β/ substituting /v/ in conversations between non-native English speakers of Japanese and Chinese. Through a conversation analytic approach, he found out that phonetic deviation from the /v/ phoneme, namely, /b/ and /β/ did not attenuate intelligibility between Japanese and Chinese non-native speakers.

Hideki (2015) explored the intelligibility of segmental sounds of English spoken by Japanese L1 speakers for non-native speakers of English and the reasons for the reduced intelligibility. He had four speakers read 23 sentences including 13 target sounds. Intelligibility was measured by 12 non-native listeners through transcription of the utterances. The research results showed that the intelligibility of the consonants in the final position influenced the recognition of words. An interesting result was that the phoneme /θ/ which was usually considered to be a sound which did not affect intelligibility turned out to be the second least intelligible consonant when pronounced as [s] or [z].

Taken together, recent studies on the LFC have produced mixed results regarding the validity of the LFC. It is worth noting that although the LFC features are very specific, Jenkins (2007) did not consider the LFC as a monolithic foundation. Rather, she (2007) argued that non-native speakers are free to adjust the core features if those features are suitable for local communication needs. In other words, the pronunciation norms are changeable depending on given interactions between ELF users themselves. Since there

has been little research concerning Korean learners in Korean contexts, the current study attempts to contribute to a larger project of identifying the LFC of pronunciation features for non-native speakers by empirically examining intelligibility of two different L1-accented English speeches by Korean learners of English.

2.3 Indian English and Chinese English

2.3.1 Indian English

Since British settled in India, followed by two hundred years of colonial rule and seventy years after Indian Independence, English has been used as a second language by the considerably large number of people. English in India is an official language designated by the Constitution, following Hindi. English is primarily used in education, administration, law, mass media, science and technology, and trade and commerce.

With respect to a standard pronunciation, many Indians attempt to acquire and impart RP. In reality, however, their English accents tend to be considerably marked by their regional features. Phonological features of Indian English are summarized as follows (Sailaja, 2009).

Consonant Sounds

- /r/ is non-rhotic, intrusive /r/ is absent
- /v/ and /w/ difference is often absent and neutralized to the voiced labiodental approximant [v]
- /θ/ and /ð/ are almost completely missing and replaced with /t̪/ or /th̪/ and /d̪/, respectively
- /t/ and /d/ occurring in the first place in the words become retroflex pronouncing [ɬ] and [ɖ], respectively
- /s/ and /ʃ/ are often used interchangeably

Vowel Sounds

- the distinction between /ʌ/ and /ə/ sometimes becomes neutralized and used as free variants (Bansal, 1978)
- /e:/ and /o:/ exist unlike RP

2.3.2. Chinese English

Over the past decades, English varieties in Mainland China (Mandarin Chinese) and Hong Kong (Cantonese Chinese) has developed increasingly. Especially with respect to Mainland China, since the opening of the Chinese economy, English learning and teaching has been central to Chinese policy in order to meet one of the needs of the “four

modernization” (Mao & Min, 2004). Accordingly, it has been observed that the mainland China has the largest English-learning population in the world (Bolton 2003, Crystal, 2008; Jenkins 2003,).

As for pronunciation varieties, as Kirkpatrick (2007) argued, speakers of China come from all over China and have different accents because of the influence from different home dialects. The main pronunciation features of Mandarin-accented English are as follows.

Consonant Sounds

- /θ/ and /ð/ are often replaced by [s], and [d] or [z], respectively
- /v/ and /z/ are often omitted or pronounced weakly
- /ʒ/ becomes the approximant [ʃ]
- /h/ often becomes pronounced as [x] (a velar fricative)
- The anticipatory nasalization of a vowel is extremely prominent, sometimes leading to the entire omission of the final nasal consonant
- In final consonant clusters, dropping consonants or inserting a vowel are usually happening

Vowel Sounds

- A full vowel is nearly always used instead of a schwa in unstressed syllables.

2.4 Intelligibility

2.4.1 Definition of Intelligibility

Although there have been several attempts to define intelligibility, there is no universally accepted definition of intelligibility. Smith and Nelson (1985) defined intelligibility as ‘the ability of the listener to recognize individual word or utterances; comprehensibility, the listener’s ability to understand the meaning of the word or utterance in its given context, and interpretability, the ability of the listener to understand the speakers’ intentions is understandably difficult to measure. Brown (1989) concluded that intelligibility is a matter of a speaker being understood fully by a particular listener on a particular occasion, as much as of a speaker making himself understood. Munro and Derwing (1995; 1997) explained that intelligibility is ‘the extent to which a listener can decode utterance and measure it by the accuracy rate of a transcription task’. They also found that intelligibility and comprehensibility are partially correlated but independent constructs. Field (2003) argued that a high level of contextual understanding may help listeners identify an unrecognizable message.

Among the various definitions of intelligibility discussed above, the current study adopts the common conceptualization of Smith and Nelson (1985)’s definition of intelligibility’. In this sense, intelligibility is restricted to the ability of listeners to accurately recognize and record individual words (Kirkpatrick, Deterding, & Wong, 2008, p.361). This is largely because non-native speakers are usually unable to compensate for pronunciation errors by using contextual or syntactic information (Jenkins,2000).

2.4.2. Measuring Intelligibility

As stated above, there is no universal agreement on a definition of intelligibility. It is natural, therefore, that there is no ‘universally accepted way’ of measuring intelligibility (Munro & Derwing, 1999, p.289).

Some studies have adopted a subjective and impressional method for measuring intelligibility. Based on the assumption that intelligibility is a scalar construct rather than a binary phenomenon, several studies have evaluated intelligibility through participants’ judgement rating using a Likert scale. (Fayer and Krasinski, 1987; Anderson-Hsieh, Johnson, and Koehler, 1992).

Other research has tried to measure intelligibility using listener’s orthographic transcriptions. In this method, the evaluation of intelligibility is usually conducted by counting the correct words (Smith, 1992; Gass and Varonis, 1984; Derwing and Munro, 1997; Munro, Derwing, and Morton, 2006). Since the current study adopts Smith and Nelson (1985)’s definition of intelligibility that refers to the ability of listeners to accurately recognize and record individual words, the intelligibility will be measured as a binomial ‘accurate/not accurate’ based on an exact character match.

2.4.3 Previous Research on Intelligibility of Various English Accents by Non-native Speakers from an ELF Perspective

There have been empirical research regarding non-native speakers' intelligibility of a variety of English accents from an ELF perspective. Chen (2011) investigated non-native speakers' perceptual judgements of the intelligibility of Chinese-accented English (Mandarin-accented and Cantonese-accented English). Five groups of listeners (Cantonese, Mandarin, native speakers, ESL learners, EFL learners) transcribed the test utterances spoken by one Mandarin and one Cantonese speaker. The results showed that for all groups, Mandarin-accented English was easier to understand than Cantonese-accented English was. Also, the NS group ranked at the first and the Cantonese group the last in the intelligibility test for both accents. An error analysis showed that the most frequent errors originated from accent unfamiliarity, word unfamiliarity, and mispronunciation of the speaker. With respect to the last factor, the author argued that phonetic deviations of core sound combined with misproduced nuclear stress caused severe misunderstanding. This is in line with the results of Jenkins' (2000) study.

Becker and Kluge (2014) examined Brazilian Portuguese speakers' evaluation of intelligibility of the English produced by the speakers of four different nationalities – American, Chinese, German and Japanese. The result showed that for Brazilian listeners, Germans, Americans, and Chinese speakers presented similar results for intelligibility, whereas the Japanese speakers resulted in problems of intelligibility. An error analysis

revealed that consonants and consonant clusters including dental fricatives turned out to be fundamental for intelligibility. This is in part contrary to Jenkins' (2000) which excluded dental fricatives from important segmentals for mutual intelligibility.

Hardman (2014) investigated the extent to which Mandarin-accented English was intelligible to L1 mandarin listeners, compared to Koreans and Americans. It was shown from the result that Mandarin accent had a severely negative effect on intelligibility for all the listener groups. The low intelligibility was largely due to a combination of the segmental variation and listener word familiarity. The author concluded that improving intelligibility involved vocabulary building as well as pronunciation and perception training of LFC.

2.5 Language Attitude

The concept of 'attitude' is of significant meaning in language learning. Crystal (1992) defined language attitude as the feelings people have about their own language or the language of others. Crismore (1996) suggested that positive attitude contributes to the acceptance and growth of language variation in a speech community.

A number of studies on language attitude have been rising dramatically since the 1960s. With respect to non-native speakers' attitudes towards English varieties, most of the research generally shows that native and standard speakers were rated more positively

than other various English accents. (Kachru and Smith, 2009; McKay, 2002; Jenkins, 2007; Dalton-Puffer et al, 1997)

Attitude toward the Indian English and the Chinese English which are mainly dealt with in the current study are also investigated by some researchers. Jeon (2011) explored Korean students' attitudes toward the Indian English. A survey-type responding sheet was used in order for 45 university students to reveal their attitudes towards the Indian English and the American English. The results showed that the American English was preferred over the Indian English. The participants considered the Indian English to be much more difficult to comprehend and farther from standard English than the American English was. In addition, they had low expectation of facing the Indian-accented English in business interactions in the future.

Ahn (2015) investigated intelligibility of various world Englishes by Korean high school students and their attitude toward the varieties' accents. An interesting find was that even though American and British English were given higher intelligibility scores than Indian and Singaporean English, the students gave more positive marks on the Indian and the Singaporean English. This is contrary to the previous studies in which non-native English varieties were given low scores with respect to intelligence and social status (Giles & Sassoon, 1983; Mashor, 2000; Scheuer, 2005). The author of the study argued that this contrary finding came from the fact that the non-native speakers' accurate and fluent English which had not been usually anticipated made the participant listeners judge them more competent.

Julie (2006) analyzed the accent perceptions of a group of 37 English language learners and 10 American undergraduate students. After each subject listened to a passage read by four speakers with different accents of English: General American, British English, Chinese English, and Mexican English, they stated their preferences and opinions about each. It was shown that Chinese English was found to be second least and the least preferred accent by English learners and Americans, respectively. The research concluded that learners' accent preferences were closely associated with ease of understanding and speed.

Yu (2015) explored attitudes of Korean English teachers and learners towards English varieties. They responded to questionnaires including semantic differential scale and Likert-type scale after listening to four different accented English speeches. In terms of Indian English and Chinese English, Chinese English accent was ranked the second and Indian accent third in accent preferences for teachers. As for learners, Indian accent was ranked the second and Chinese accent the third followed by Korean accent.

In the section of 2.4 and 2.5, previous research on intelligibility of various English accents by non-native speakers and their attitudes towards the various English accents were presented. However, there is not much research dealing with both intelligibility and attitudes in one study in an ELF perspective. Neither are there many studies focusing on Korean learners of English. To address this lack, this study aims to investigate Korean EFL learners' intelligibility and attitude toward English spoken by non-native speakers from an ELF perspective.

Chapter3.

METHODOLOGY

The current study aims to investigate the intelligibility of Hindi- and Chinese-accented English by Korean high school students and their attitude toward the English varieties' accents from an English as a Lingua Franca (ELF) perspective. To this end, this study practiced intelligibility tests and a survey on two different English speeches. This chapter presents a general overview of methodology and research design employed in the current study. It begins with the description of participants, instruments, followed by the methods for data collection and statistical analysis.

3.1 Participants

A total of 42 Korean students and 12 native speakers of English participated in this study. The first group was all Korean EFL high school students in Gyung-gi province. They were aged between 16 and 17 and had no experience of studying abroad, and therefore, had received similar English education (3 years in elementary school, 3 years in middle school, and one year in high school). The Korean group was subdivided into two groups (Group A

& Group B) in which each group [n=21] listened to one of the two different English speeches: Hindi-accented English speech and Mandarin-accented English speech. The overall listening proficiency level of the Korean participants was intermediate-to-advanced, which was based on nationwide English listening comprehension test administered on September 20th, 2016. A mean test score was 19.26 (SD=0.94) and 19.30 (SD=0.81) for Group A and Group B, respectively (A full point was 20). The second group consisted of 12 native speakers of English. This group functioned as a comparison group to get deeper understanding of errors of the Koreans in the intelligibility test. They were also divided into two groups where each group [n=6] was engaged in listening to the Hindi-accented English speech and the Mandarin-accented English speech, respectively.

Table 3.1
Korean Participants

	Hindi-accented English speech	Mandarin-accented English speech
L1	Korean	Korean
Gender	male 8, female 13	male 10, female 11
Mean Age	16.90	17.00
Mean English listening comprehension test score (*full point: 20)	19.26 (SD=0.94)	19.30 (SD=0.81)

Table 3.2
Native English Participants

	Hindi-accented English speech	Mandarin-accented English speech
L1	English	English
Nationality	Canadians 3, Americans 2, South African 1	Americans 3, Canadians 2, Irish 1
Gender	male 4, female 2	male 5, female 1
Mean Age	41.16	38.52

3.2 Instruments and Procedures

3.2.1 Pilot Test

To anticipate and remedy the potential problems of using the intelligibility test, a pilot test was conducted. 4 Korean students who were in same grade (the 1st graders) of the school participated in the pilot test. The identical intelligibility test procedure that would be adopted in the main study was used. Through the test, a few meaningful results were obtained. It was proven by the pilot test that it would be desirable to omit some words from the intelligibility scores. For example, words such as ‘Stella’, ‘slabs’, and ‘scoop’ were found to be quite unfamiliar with the participants. Therefore, those words would be given

on the main test. On the other hand, because words such as ‘ask’, ‘six’, ‘blue’, ‘and’, ‘maybe’, ‘a’, ‘we’, ‘also’, ‘need’, ‘a’, ‘small’, ‘and’, ‘a’, ‘she’, ‘can’, ‘and’, and ‘go’ were regarded as too easy for the participants, those words would also be presented on the main test and excluded from the intelligibility scores for the sake of economy.

3.2.2 Audio Materials

In this study, the oral stimulus came from a corpus of ELF-Speech Accent Archive (Weinberger, 2013). The text consists of 69 words, of which 21 words were already given to the listeners, resulting in 48 words in total in the dictation sheet. The reasons for the exclusion of 21 words¹ came from the fact that they did not show any phonological deviations from so-called standard pronunciations or revealed a high level of unfamiliarity with Korean students proven by a pilot test. (See appendix A)

The text was read by two speakers: an Indian speaker of Hindi and a Chinese speaker of Mandarin. They were chosen as being from countries which are major commercial partners with Korea, and therefore with whom English is most likely to be used as the means of business interactions with Koreans. The major criteria for selecting the two speakers were speakers’ distinctive phonological features of the country and minimized variables that might affect the results. With respect to the phonological factors, the

¹ The words are as follows: Stella, ask, six, slabs, blue, and, maybe, a we, also, need, a small, and, a , she, can, scoop, and, go

phonological characteristics of all sample speeches on the web site were scrutinized and those presenting the characteristics of Hindi and Mandarin accented English speeches the most were chosen. Then, variables like biographical data, such as gender, age, length of English residence, and voice quality were carefully considered. All those factors considered, the final two speakers were decided and more detailed information about them is presented in table 3.3. Also, the phonological generalizations of each accented speech are summarized in table 3.4. (For the original listening script and phonetic transcriptions of each speaker, see appendix B)

Table 3.3
Biographical Data of the Speakers

	Hindi-accented English speaker	Mandarin-accented English speaker
L1	Hindi	Mandarin-Chinese
Nationality	India	China
Gender	male	male
Age	27	29
Age of English onset	2	12
English learning method	academic	academic
English residence	UK, USA	USA
Length of English residence	3.5 years	5 years

Table 3.4
Phonological Generalizations of Each Speech

Native language		Hindi	Mandarin Chinese
Phonological generalizations			
Interdental fricative to stop	ð	<u>the</u> se <u>with</u>	<u>the</u> se <u>things</u>
	θ	<u>the</u> <u>things</u>	<u>with</u> <u>three</u> <u>the</u>
R to trill		<u>fr</u> esh <u>for</u> <u>her</u> <u>bro</u> ther <u>thr</u> ee <u>red</u> <u>her</u>	
Retroflexing [t]		<u>to</u> <u>toy</u> <u>into</u> <u>meet</u> <u>at</u>	
Voiceless velar fricative [x]			<u>her</u>
Vowel insertion			<u>blue</u>
Final obstruent devoicing		Please <u>things</u> <u>peas</u> <u>kids</u> <u>these</u> bags <u>of</u> <u>five</u> big frog	Bob <u>need</u> <u>frog</u> <u>cheese</u> bags <u>peas</u> <u>kids</u> <u>five</u> <u>of</u> <u>with</u>
W to labial fricative[v]		<u>with</u> <u>we</u> <u>will</u> <u>Wednesday</u>	
Non-aspiration		<u>please</u> <u>call</u> <u>peas</u> <u>cheese</u> plastic <u>toy</u> <u>kids</u> <u>train</u>	plastic <u>kids</u> <u>train</u>
Consonant deletion			<u>red</u> <u>call</u> <u>bring</u> <u>ask</u> <u>for</u> <u>spoons</u> <u>Wednesday</u> <u>the</u>
Vowel shortening			<u>things</u> <u>three</u>
Vowel raising		<u>things</u> <u>Bob</u> <u>toy</u>	

3.2.3 Questionnaire

The questionnaire used in the current study consists of three categories of questions: competence (1~5), social attractiveness (6~9), and personal integrity (10~14). The use of three dimensions in language attitude studies was first introduced by Edwards (1977) and has been widely employed by a lot of researchers (Bradford, Farrar, & Bradford, 1974; Lambert 1967; Chen 2011). And the choice of adjectives in the questionnaire was also inspired by the identical research above (Bradford, Farrar, & Bradford, 1974; Lambert 1967; Chen 2011). The participants were expected to mark their responses on a 7-point semantic differential scale ranging from “strongly disagree (1)” to “strongly agree (7). (See appendix A)

3.2.2 Procedure

The intelligibility test consisted of first listening to the text once, to get a global idea of the speech. Next, the excerpt were played sentence by sentence and participants were given time to write down that they had heard. After the last sentence, they listened to the whole text once more, then they finished writing,

After the intelligibility test, they were presented with a response sheet which was designed to reveal the participants’ stereotypical reactions to the accent. The questionnaire

was constructed in the form of a 7-point Likert scale where 1 indicated strongly disagree and 7 strongly agree. The choice of adjectives in the questionnaires was motivated by several studies on accents (Bradford, Farrar, & Bradford, 1974; Lambert 1967; Hsueh 2011). The contents of the questionnaire included three attitude categories: competence, social attractiveness, and personal integrity.

After they had completed the intelligibility test and the questionnaire, a follow-up interview was performed. The interview was conducted to obtain a more qualitative understanding of their answers. It was conducted in Korean and English for the Koreans and the native speakers, respectively, and transcribed in English afterwards.

3.3 Data Collection and Analysis

The raw scores of the participants' intelligibility tests and attitude survey were used as an instrument in this study. In terms of the evaluation of intelligibility, measurement was carried out by means of an orthographic transcription of what had been written by listeners. More specifically, intelligibility was measured as a binomial 'accurate/not accurate' based on an exact character match. As for the error analysis, words which were mistaken and mistranscribed were scrutinized. Subsequently, reasons for the frequent errors committed both by the Koreans and the native speakers and only by the Koreans were identified.

For the statistical analysis, the Statistical Packet for Social Science (SPSS 20 for Window 10) was employed to analyze the data. Descriptive statistics, means, and standard deviation were calculated to gain an overall picture of the intelligibility of the two accents. Results were analyzed using independent samples t-test and Welch-Aspin test with the significance level set at 0.05. Also, Cohen's *d* value was calculated to indicate the magnitude of the group difference (i.e., effect size of the results) between the two groups.

Chapter4.

RESULTS & DISCUSSION

This chapter provides the results of the study based on the data analysis. 4.1 explains intelligibility of the Hindi-accented and the Mandarin accented English by the Korean learners. 4.2 demonstrates intelligibility of the Hindi-accented and the Mandarin accented English by the native speakers. 4.3 describes intelligibility of the Hindi-accented English by the Korean learners and the native speakers. Intelligibility of the Hindi-accented English by the Korean learners and the native speakers will be explained in 4.4. 4.5 demonstrated an error analysis based on three criteria. 4.6 describes the Koreans' and the native speakers' attitude toward the Hindi-accented and the Mandarin-accented English speech.

4.1 Intelligibility of the Hindi-accented and the Mandarin- accented English by the Korean Learners

One of the main goals of the current research is to investigate whether there is a significant difference between intelligibility of the two different accented speeches by the Korean learners. Figure 4.1 shows the mean value of intelligibility scores between the Hindi-accented and the Mandarin-accented speech evaluated by the Korean learners. There

is a clear difference in the mean intelligibility scores of the Hindi-accented speech and the Mandarin-accented speech. The Korean learners accurately transcribed about 26 words out of the total 48 words of the Hindi-accented English speech stimuli and about 21 words of the Mandarin-accented English speech on average, indicating that Korean listeners found the Mandarin-accented English to be significantly less intelligible than the Hindi-accented English.

Figure 4.1
Mean Value of Intelligibility Scores between Hindi-accented
and Mandarin-accented Speech by Korean Learners (Note. full points: 48)

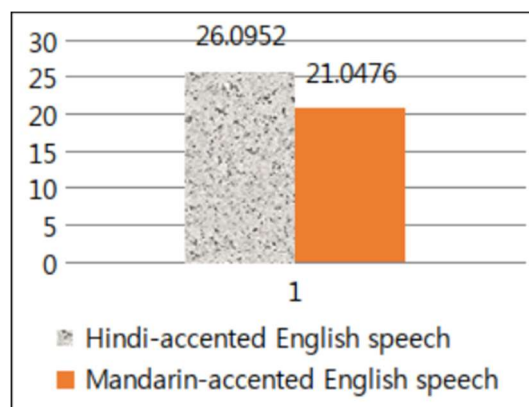


Table 4.1 illustrates the group statistics and Table 4.2 shows the result of the independent samples t-test which were carried out to compare the mean values of the both groups. The results present that there is a significant difference between the intelligibility of the Hindi-accented speech and the Mandarin-accented speech [$p=.008$, $<.05$], which provides an indication that the intelligibility of the two different L1 accented speakers by

the Korean learners is statistically significant. In order to examine the magnitude of the group difference (effect size of the results), Cohen's d was calculated ($d= 0.862$), which indicated a large effect size – implying there was a large practical difference between the two groups.

Table 4.1
Group Statistics of Intelligibility Scores by Korean Learners

Languages		N	Mean	Std Deviation	Std. Error Mean
Scores	Hindi- accented	21	26.0952	5.94899	1.29818
	Mandarin- accented	21	21.0476	5.75740	1.25637

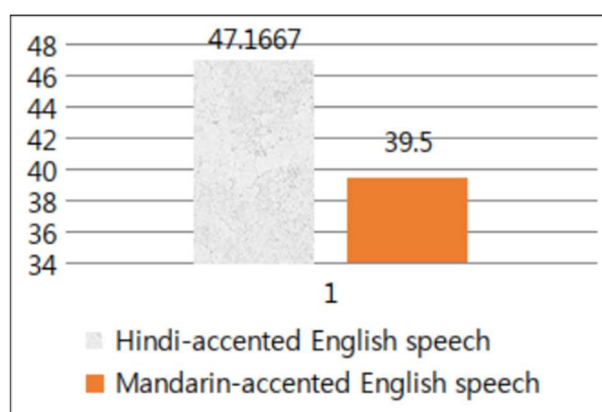
Table 4.2
Independent samples Test Summary of Intelligibility Scores by Korean Learners

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Scores	Equal variances assumed	.021	.885	2.794	40	.008	5.04762	1.80658	1.39639	8.69885
	Equal variances not assumed			2.794	39.957	.008	5.04762	1.80658	1.39627	8.69897

4.2 Intelligibility of the Hindi-accented and the Mandarin- accented English by the Native Speakers

It is apparent from the result in 4.1 that the Korean listeners transcribed the Hindi-accented English words at a higher accuracy rate than they did the Mandarin-accented English words. That does not, however, necessarily lead to the conclusion that the Mandarin-accented English speech caused low intelligibility for other L1 speakers. In order to get a deeper understanding of the reason why the two different L1-accented English speeches showed significantly different intelligibility scores, an analysis of intelligibility scores of native speakers of English was also conducted.

Figure 4.2
Mean Value of Intelligibility Scores between Hindi-accented and
Mandarin-accented Speech by Native Speakers (Note. full points: 48)



In Figure 4.2, the average value of intelligibility scores of the native speakers are presented. As shown in the graph, there is a clear difference between the two groups. That is, there is a higher mean value in the Hindi-accented speech ($M=47.1667$) than in the Mandarin-accented speech ($M=39.5$). In order to see if there is a statistically significant difference between the two groups, a series of analyses were conducted. Firstly, since the sample size ($n=6$) of the native speaker was too small, Kolmogorov-Smirnow test was carried out to examine the degree of normality. It was determined that the samples satisfied the condition of normality because P value was greater than 0.05 ($p=.200$ for the Hindi-accented speech, $p=.056$ for the Mandarin-accented speech). Secondly, since the assumption of homogeneity was not met (the Levene's test, $p=.000$, $p<.05$), Welch-Aspin test was carried out. As shown in Table 4.4, the intelligibility of the Hindi-accented English speech and the Mandarin-accented English speech for the native speakers also turned out to have statistically significant difference ($p=.000$). This is generally in line with the result in 4.1, suggesting that the Mandarin-accented English speech was significantly less intelligible than the Hindi-accented English speech for both the Korean listeners and the native speakers of English. In order to examine the magnitude of the group difference (effect size of the results), Cohen's d was calculated to be $d = 6.4$, which indicated a very large effect size – implying there was a significant difference between the two groups .

The results of intelligibility of the Hindi-accented and the Mandarin-accented speech for the Koreans and the native speakers discussed in 4.1 and 4.2 show a similar pattern that the Indian speaker was more intelligible for both the Koreans and the native speakers than the Chinese speaker. One possible explanation for the high scores of the Hindi-accented

speech is related with high accuracy rate of the participants' identifying the country of origin of the speaker. When asked to guess the nationality of the speaker, 13 of 21 Korean participants and 5 of 6 native speakers accurately identified the nationality of the Indian speaker whereas none of the Koreans and only one native speaker guessed the nationality of the Chinese speaker correctly. The follow-up interview provided an account for the high accuracy rate of identifying the Hindi-accented speech than the Mandarin-accented speech. Of 18 participants who correctly guessed the nationality of the Hindi-accented speech, 11 participants admitted having been exposed to Indian English through Bollywood movies and the Internet. This result accords with that of other previous studies (Smith & Bisazza, 1982; Gass & Varonis, 1984; Kirkpatrick, 2005;) which concluded that accent familiarity played a major role for non-native listeners to comprehend English speeches spoken by non-native speakers of English.

Another possible explanation for the low scores of the Mandarin-accented speech can be attributed to high frequency of phonetic deviations committed by the Chinese speaker. That is, some phonological features of Mandarin-accented English which had not been expected before the experiment might have resulted in low intelligibility for the listeners. The phonetic deviations that severely impeded the listeners' intelligibility will be examined in 4.5.

Table 4.3
Group Statistics of Intelligibility Scores by Native Speakers

Languages	N	Mean	Std Deviation	Std. Error Mean
Scores	Hindi -accented	6	47.1667	.75277
	Mandarin -accented	6	39.5	1.64317

Table 4.4
Independent samples Test Summary of Intelligibility Scores by Native Speakers

		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Sig. (2- tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
										Lower	Upper
Scores	Equal variances assumed	27.264	.000	10.390	10	.000	7.66667	.73786	6.02260	9.31073	
	Equal variances not assumed			10.390	7.010	.000	7.66667	.73786	5.92241	9.41092	

4.3 Intelligibility of the Hindi-accented English by the Korean Learners and the Native Speakers

In order to concentrate on the discrepancy between the intelligibility of the specific L1-accented English speeches evaluated by the different L1 listeners, that is, the Hindi-accented English speech and the Mandarin-accented English speech, respectively, a comparison was made with the focus on each L1-accented speech by the Koreans and

native speakers. Table 4.5 shows that as for the Hindi-accented English speech, the native speakers ($M=47.1667$) considerably outperformed the Koreans ($M=26.0952$). Since the degree of normality was satisfied by Kolmogorow-Smirnow test ($p=.200$ for both groups, $p>.05$) and the equal variance was not assumed (the Levenes $p=.06$, $p>.05$), Welch-Aspin test was applied for the analysis. Table 4.6 shows that the result of the analysis indication that there is a statistically significant difference between the groups ($p=.000$).

One possible explanation for the lower scores of the Korean listeners compared to the native speakers is that the Koreans might have been less exposed to the Hindi-accented English, and therefore found it less familiar. This assumption is supported by the post interview which indicated that all the native speakers guessed the nationalities of the speaker of the stimuli correctly while only five out of 21 Koreans guessed right.

Table 4.5
Group Statistics of Intelligibility Scores of the Hindi-accented Speech

Listeners		N	Mean	Std Deviation	Std. Error Mean
Scores	Koreans	21	26.0952	5.94899	1.29818
	Native speakers	6	47.1667	.75277	.30732

Table 4.6
Independent samples Test Summary of Intelligibility Scores of
the Hindi-accented Speech

		Levene's Test for Equality of Variances		t-test for Equality of Means						
Scores		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
	Equal variances assumed	9.038	.006	-8.538	25	.000	-21.07143	2.46804	-26.15445	-15.98840
	Equal variances not assumed			-15.795	22.028	.000	-21.07143	1.33406	-23.83789	-18.30497

4.4 Intelligibility of the Mandarin-accented English by the Korean Learners and the Native Speakers

Table 4.7 and Table 4.8 show the summary of the groups statistics and the Welch-Aspin test which were performed to compare the two mean values of both groups and the statistically significant difference, respectively. There was a higher mean value of the native speaker group (M=39.5000) than in the Korean group (M=21.0476). Table 4.8 shows that there is a significant difference between the Koreans and the native speakers, which shows the similar result of the Hindi-accented speech in 4.3.

Table 4.7
Group Statistics of Intelligibility Scores of the Mandarin-accented Speech

	Listeners	N	Mean	Std Deviation	Std. Error Mean
Scores	Koreans	21	21.0476	5.75740	1.25637
	Native speakers	6	39.5000	1.64317	.67082

Table 4.8
Independent samples Test Summary of Intelligibility Scores of the Mandarin-accented Speech

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Scores	Equal variances assumed	5.337	.029	-7.663	25	.000	-18.45238	2.40794	-23.41162	-13.49314
	Equal variances not assumed			-12.956	24.926	.000	-18.45238	1.42424	-21.38610	-15.51866

The results of Koreans' and the intelligibility of the Hindi-accented speech and the Mandarin-accented speech by the native speakers presented in 4.3 and 4.4 shows that the native speakers revealed higher intelligibility for the both accented speeches than the Koreans did. The Koreans' relatively low scores of the both accented speeches suggest that there must have been another factor leading to the poor intelligibility. According to the post interview after the test, some of the Korean students said that words such as 'blue cheese'

‘snow peas’ were unheard of before. Even though some unfamiliar words proven by a pilot test were left out from the test, some words turned out to have impeded the intelligibility. That is, word familiarity was found to be a significant factor for intelligibility. Bundgaard-Nielsen et al. (2011, 2012) found that phonological knowledge was closely linked to vocabulary size. More detailed descriptions of the errors will be discussed in 4.5.

4.5 Error Analysis

In order to answer the second research question, “What are the factors that impeded the intelligibility?”, an error analysis was conducted. The error analysis was performed based on the following two criteria.

1. Which word is mistaken and mistranscribed as?
2. What are the reasons for the frequent errors?
 - a. What are the reasons for the frequent errors committed by both the Korean learners and the native speakers? Do the errors come from the speaker factor?
 - b. What are the reasons for the frequent errors committed only by the Korean learners?

4.5.1 The Most Frequent Errors of Each Group

As for the first criterion of the error analysis “Which word is mistaken and mistranscribed as?”, the most frequent errors of each group were examined. Table 4.9 shows the most frequent errors of each group. The data only shows the frequency of error equal to or more than 75% for Korean learners and 16.66% for native speakers. The adoption of frequency error of the Koreans (75%) was based on the previous study on intelligibility (Chen, 2011). On the contrary, more rigid standard of frequency error rate (16.66%) was applied to the native speakers. The figure conforms to at least one person out of the six native participants.

As already shown in the comparison of intelligibility scores presented in chapter 4.1~4.4, the number of error words of the Hindi-accented English speech (Koreans: n=8, Native speakers: n=5) is much more than those of the Mandarin-accented English speech (Koreans: n=14, Native speakers: n=9).

Table 4.9 The Most Frequent Errors of Each Group

Group	Error Rates	Hindi-accented speech			Mandarin-accented speech		
		Words	Phonetic Transcriptions	Examples	Words	Phonetic Transcriptions	Examples
Koreans	100%				peas	pis	piece(11) peace(4) blank(3)
					thick	θiŋ	(blank)(11) things(5)
					Wednesday	wɛnsdeɪ	blank(15) with there(2)
					At	a	(blank)(20)
	95.23%	Bob spoons	bɒb spunz	(blank)(18) (blank)(9) forms(6) (blank)(9) from(2) been(2) bees(2) (blank)(8)	spoons	spũns	bones(12) (blank)(6) (blank)(10) a(7) the(2)
		peas	piz̥		her	rə	(blank)(13) valley(2)
		toy	ʈoi	doll(5) (blank)(15)	brother Bob	bɾod̪ɐ bob	
		frog	fɾag				
	90.47%	cheese	ʃiz̥	jeans(5) teas(2)	her	xɻ	(blank)(16) a(16)
					the red	rə ɾed̪	(blank)(7) grad(2) black(2)
	85.71%	her	ər	(blank)(13) a(3)	frog	fɾɔk	(blank)(9) fork(2) folk(2)
					her	hɛ	(blank)(12) there(2)
	80.95%	red	ɾed̪	(blank)(8) little(5)	these	dis	this(12) (blank)(5)
					kids train	kɪd̪s tɾɪn	case(17) twin(10)
Native Speakers	76.19%				things	˜sɪns	(blank)(9) seas(2) scenes(2)
	100%				thick	θiŋ	things(5) thin(1)
					the	rə	a(4) her(1) our (1)
					brother	bɾod̪ɐ	(blank)(6)
	83.33%				Bob	bɒb	(blank)(5)
	66.66%				kids	kɪd̪s	case(4)
	50%						
	33.33%	her	ər	our(2)	the frog her store	nə fɾɔk hɛ sto:	next(2) fork(2) the(2) door(2)
		thick	θɪk	think(1)			
		snow peas	piz̥	Notees(1)			
	16.66%	brother	bɾʌðər	(blank)(1)			
		Bob	bɒb	(blank)(1)			

(Note. The figure number in the parentheses refers to the number of people.)

4.5.2 The Most Frequent Errors: Hindi-accented Speech

In order to meet the second criterion of the error analysis, a comparison of the frequent errors focusing on the Hindi-accented and the Mandarin-accented speech, respectively, was carried out. Table 4.10 shows the frequent errors and examples of the Hindi-accented speech.

Firstly, the words which were found unintelligible both by the Koreans and the native speakers were ‘peas’[piz̥], ‘brother’[brʌðər], ‘Bob’[bɒb], ‘her’[hə]. For the word ‘peas’[piz̥], it was found from the post interview that the Koreans’ mistranscription considerably came from low familiarity with the word ‘(snow) peas’. In contrast, only one of the six native speakers transcribed the word ‘(snow) peas’ as ‘Notees’ which is the name of a certain note application program. As for the word ‘her’, it is conceivable that the unintelligibility of the word originated from the Hindi-accented speaker who pronounced it as [ər]. With respect to the words ‘brother’[brʌðər] and ‘Bob’[bɒb], it was revealed from the interview that the listeners found the voice quality of the words as unclear and too small to recognize.

Secondly, the words which were considered unintelligible only by the Koreans were ‘cheese’ [tʃiz], ‘toy’[tɔi], ‘spoons’[spunz], ‘frog’[fɹag] and ‘red’[rɛd]. For the word ‘cheese’ [tʃiz], it is interesting that quite a lot of the Korean listeners transcribed it as ‘jeans’. Many Korean listeners said in the personal interview that they had never been exposed to the

word ‘(blue) cheese’ which refers to a specific type of cheese which is spotted or veined throughout blue-grey mold *Penicillium*, and instead they came up with the more familiar word ‘(blue) jeans’. This can be explained by their lack of content schema which is the background knowledge of the culture or the world. Regarding the word ‘toy[tɔɪ]’, five students transcribed it as ‘doll’, which leads to the assumption that retroflex [ɮ] which is one of the characteristics of Hindi-accented English causes considerable unintelligibility in the ELF context.

Table 4.10 The Most Frequent Errors: Hindi-accented Speech

Error Types	Words	Phonetic Transcriptions	Koreans	Native Speakers
Error committed by both the Koreans and the native speakers	(snow)peas	piz _ɮ	(blank)(9) from(2)	Notees
	Brother	brʌðər	(blank)(18)	(blank)(1)
	Bob	bɒb	(blank)(9)	(blank)(1)
	her	ər	(blank)(13) a(3)	our(2)
Error committed only by the Koreans	spoons	spunz	forms(6) (blank)(9) from(2)	
	cheese	tʃiz	jeans(5) teas(2)	
	toy	tɔɪ	(blank)(8) doll(5)	
	frog	fɾag	(blank)(15)	
	red	rɛɖ	(blank)(8) little(5)	

4.5.3 The Most Frequent Errors: Mandarin-accented Speech

Table 4.11 shows the frequent errors and examples of the Mandarin-accented speech. Firstly, the words which were misidentified and mistranscribed by both the Korean learners and native speakers were ‘brother’[bɹod.ɹ̥], ‘thick’[θĩŋ], ‘Bob’[bob], ‘the’[rə], ‘kids’[kɪɢs], ‘store’[stɔ:]’, and ‘her’[xɹ]. For the words ‘brother’[bɹod.ɹ̥], ‘thick’[θĩŋ], ‘and Bob’[bob], not only the Koreans but also most of the native speakers failed to transcribe the words, which indicates that low intelligibility of those words originated from the speaker’s pronunciation. For example, as for the word ‘kids’[kɪɢs], it is worth noting that most of the participants, regardless of their L1, recognized the word as ‘case’. The reason can be inferred from phonetic description of the word spoken by the Mandarin speaker, that is, [kɪɢs]. It is reasonable to say that devoicing of the final obstruent led to considerably low intelligibility on the part of the listeners.

Secondly, the words that turned out to be unintelligible only for the Koreans were ‘spoons’[spũns], ‘peas’[pis], ‘her’[rə] and ‘train’[tṛĩn]. For the word ‘these’[dis], 12 out of 21 the Koreans transcribed the words as ‘this’. One possible explanation for the low intelligibility of the word lies in phonetic deviation from the word, ‘[dis]’ which contains a shortened vowel and a devoiced final obstruent. Another explanation which is more valid is that the Korean listeners were more deficient in competence of applying grammatical knowledge listening comprehension than the native speakers. This explanation is supported by the next word of ‘these’ which is the plural form, ‘things’. As for the word ‘peas’, word

familiarity was also found to be significant regarding intelligibility. Just like the participants in the Hindi-accented speech group, most of the participants in this group confessed in the post interview that they had never heard of the words ‘(snow) peas’ before. Bundgaard-Nielsen et al (2011, 2012) suggested that phonological knowledge had close relationship with vocabulary size than any other factors. Hardman (2014) also concluded that listeners’ word familiarity (with Mandarin-accented English in his study) was significant for intelligibility. With respect to the word ‘train’, it is noteworthy that almost half of the Korean listeners considered the word as ‘twin’, which is thought to be the result of the shortened vowel [ɪ]. This is contrary to the fact that none of the native speakers misidentified and mistranscribed the word as ‘twin’. The exact reasons for the Koreans’ error were not identified, which remains one of the limitations of the current study.

The analysis of the frequent errors of each group revealed mixed results from the LFC (Jenkins, 2000). Regarding the Hindi-accented English, first, the pronunciation of /w/as [v] was found to be intelligible by both the Koreans and native speakers. Although the words beginning with /w/ was articulated like ‘with’[vɪt], ‘we’[vi], ‘will’[vɪl], and ‘Wednesday’[vɛnzdeɪ], most listeners had no difficulty in identifying the words. Second, variations on dental fricatives pronounced by the Hindi-accented speaker were found to be acceptable. The Koreans had no problem in recognizing the Hindi-accented English pronunciation such as ‘things’[tɪŋks], ‘three’[tri], and ‘these’[diz]. This result is in line with the previous studies (Jenkins, 2000, 2009, Walker, 2010) in that phonetic variations on the consonant [θ] and [ð] do not lead to misunderstanding in the ELF context. Lastly, as for

retroflex [ʈ] which is pronounced when /t/ or /d/ occurs in the first place in the word by Hindi-accented English speakers, retroflex [ʈ] was recognized as [d] by a significant number of the Korean listeners, which therefore impeded intelligibility.

Regarding the Mandarin-accented English speakers, two points are worth mentioning. First, as for dental fricatives, the current study presented a contradictory result to the LFC. For instance, for the word ‘these [dis]’ where /ð/ was articulated as [d], it was only Koreans who failed to identify the word and most of them mistranscribed the word as ‘this’. As stated above, this error must have originated from the Koreans’ lack of competence of applying grammatical competence to listening comprehension. Second, as for the substitution of [x] for the segmental /h/, it was found to be unacceptable to both the Koreans and the native speakers. Given that Chinese speakers frequently articulate the sound /h/ as [x], special attention is required for speakers and listeners to achieve mutual intelligibility regarding the sound.

Table 4.11 The Most Frequent Errors: Mandarin-accented speech

Error Types	Words	Phonetic Transcriptions	Koreans	Native Speakers
Error committed by both the Koreans and the native speakers	the	nə	(blank)(14)	next(2)
	store	stə:	door(2) restaurant(2)	door(2)
	frog	fɹɔk	(blank)(9) fork(2) folk(2)	fork(2)
	the	rə	(blank)(7)	a(4) her(1) our(1)
	kids,	kɪd̥s	case(17)	case(4)
	brother	bɹɔd̥ə	(blank)(13) valley(2)	(blank)(6)
	Bob	bɒb	(blank)(12) ball(3)	(blank)(5)
	thick	θɪŋ	(blank)(9) seas(2) scenes(2)	things(5) thin(1)
	her	rə	(blank)(12) there(2)	the(2)
	these	dɪs	this(12) (blank)(5)	
Error committed only by the Koreans	spoons	spũns	bones(12) (blank)(6)	
	peas	pɪs	piece(11) peace(4) blank(3)	
	her	hɛ	(blank)(16)	
	train	tɹĩn	twin(10)	

4.6 Attitude

4.6.1 Koreans' Attitude toward the L1-accented Englishes

Table 4.12 describes a comparison of Korean listeners' attitude toward the Hindi-accented English and the Mandarin-accented English. In general, figure 4.3 shows a similar pattern of the two accents. Specifically, Both accents were given high scores of 'unfamiliarity', 'anxiety' and low scores of 'easiness' and 'likability'. More specifically, means varied for item 4 "I am not familiar with this accent" (M=5.1 vs. 5.5); for item 5 "English with this accent makes me anxious" (M=4.1 vs. 5.0); for item 1 "It is easy for me to understand English with this accent" (M=2.9 vs. 1.7); and for item 2 "I like English with this accent" (M=2.9 vs. 2.4). One possible explanation for the participants' negative view toward the two accents may be due to the fact that many participants were not familiar with the two accented Englishes, compared to standard English accents. It is noticeable that many Korean students recognized the existence of varieties of world Englishes. They said in the post interview that they had heard there were a variety of Englishes other than American and British English. However, they confessed that they had little opportunities to be exposed to Indian or Chinese English. Interestingly, in respect toward item 4 "I am not familiar with this accent" (M=5.1 vs. 5.5), the students marked slightly higher scores on the Mandarin-accented speech than the Hindi-accented speech. Some students had had

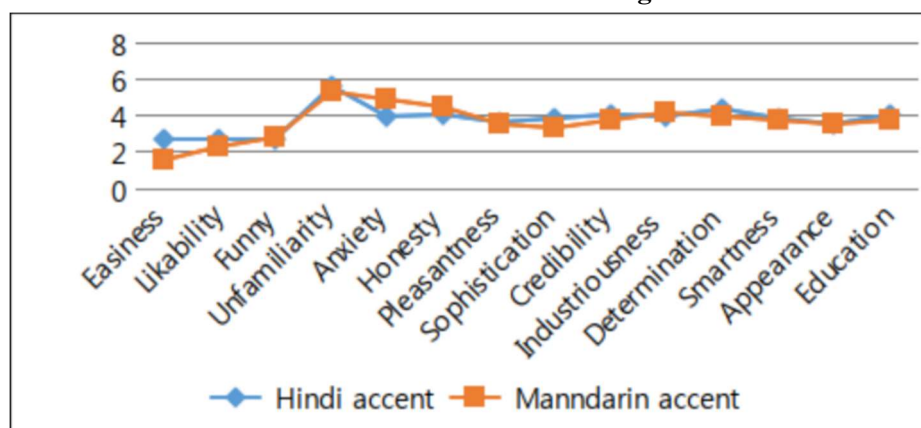
experience encountering Indian English through movies², and most of them reported they could recognize the Indian accented English. Considering that the intelligibility scores of the Hindi-accented English by the Korean learners' were higher than the Mandarin-accented English as shown in 4.1, a close relationship between intelligibility and accent familiarity is confirmed again. This view supports Kirkpatrick (2005) that one of the primary factors of intelligibility is concerned with the listeners' familiarity with the speaker's variety of English.

**Table 4.12 Koreans' Attitude Toward the Hindi-Accented
and the Mandarin Accented English**

No.	Feelings toward Accents	Hindi-accent	SD	Mandarin-accent	SD
1	Easiness	2.9	2.4	1.7	0.8
2	Likability	2.9	1.7	2.4	1.2
3	Funny	2.9	1.8	3	1.6
4	Unfamiliarity	5.1	0.8	5.5	1.8
5	Anxiety	4.1	1.8	5	1.7
6	Honesty	4.2	1.1	4.6	1.3
7	Pleasantness	3.8	0.9	3.7	1.2
8	Sophistication	4	1.1	3.5	1.1
9	Credibility	4.2	0.9	3.9	1.3
10	Industriousness	4.1	0.9	4.3	1.1
11	Determination	4.5	1.1	4.1	1.2
12	Smartness	4	0.8	3.9	1.2
13	Appearance	3.7	1.3	3.7	1.3
14	Education	4.2	1.4	3.9	1.4

² Some participants said in the post interview that they had watched a Bollywood movie "Three Idiots" about five months ago in English class.

Figure 4.3 Summary of Koreans' Attitude Toward the Hindi-Accented and the Mandarin Accented English.



4.6.2 Native Speakers' Attitude toward the L1-accented Englishes

As shown in Table 4.13, the Hindi-accented English was rated more favorably than the Mandarin-accented English by the native speaker groups. It can be seen that the Hindi-accented English was rated more favorably than the Mandarin-accented counterpart on almost all attributes. It is contrary to the result in 4.6.1 in that Koreans revealed negative attitudes toward the both accents. Specifically, the native participants made better appraisals of the Hindi-accented English than the Mandarin-accented English with respect to 'easiness', 'likability', and 'familiarity'. It is noteworthy that there is a huge gap regarding the category 1 (Item1~5). That is, for the Hindi-accented English, high scores were marked on 'easiness', and 'likability' while low scores on 'funny', 'unfamiliarity', and 'anxiety'. On the other hand, for the Mandarin accented counterpart, 'easiness' and 'likability' were given low scores whereas 'funny', 'unfamiliarity', and 'anxiety' were given high scores. More specifically, means varied for item 1 "It is easy for me to understand English with this accent" ($M=5.3$ vs. 3.2); for item 2 "I like English with this accent"

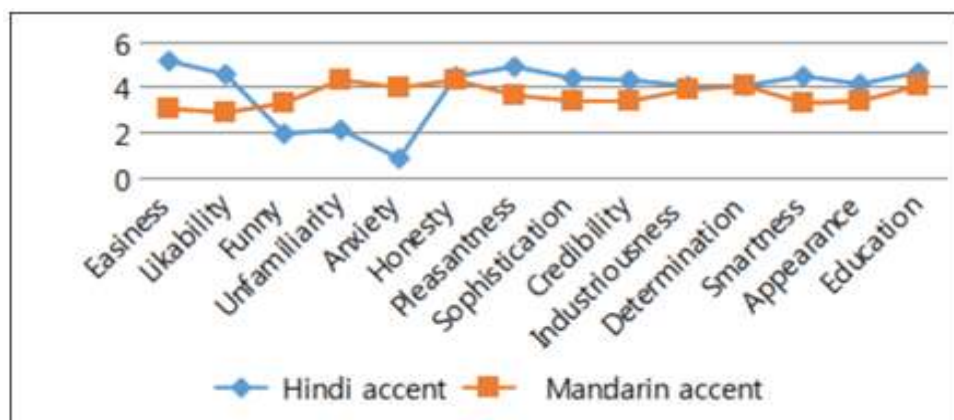
(M=4.7 vs. 3.0); for item 3 “I think English with this accent is a little funny” (M=2.1 vs. 3.4); for item 4 “I am not familiar with this accent” (M=2.2 vs. 4.4); and for item 5 “English with this accent makes me anxious” (M=1.0 vs. 4.1).

The native speakers' contradictory attitude toward the two accents can be attributed to difference in the extent to which they have been exposed to the two accents. In fact, from the post interview, it was revealed that five out of six participants guessed the nationality of the Hindi-accented English speaker correctly, admitting that they had heard of Indian English through various means. This is contrary to the Mandarin-accented English which only one out of six participants guessed correctly the nationality of.

Table 4.13 Native Speakers' Attitude Toward Hindi-Accented and Mandarin Accented English

No.	Feelings toward Accents	Hindi-accent	SD	Mandarin-accent	SD
1	Easiness	5.3	1.3	3.2	1.7
2	Likability	4.7	1.1	3	1.4
3	Funny	2.1	1.5	3.4	1.3
4	Unfamiliarity	2.2	1.2	4.4	1.9
5	Anxiety	1	0.3	4.1	1.7
6	Honesty	4.6	1.2	4.4	1.2
7	Pleasantness	5	1.2	3.8	1.2
8	Sophistication	4.5	0.8	3.5	1.1
9	Credibility	4.4	0.9	3.5	1.2
10	Industriousness	4.2	1	4	1.5
11	Determination	4.2	0.9	4.2	0.4
12	Smartness	4.6	1.1	3.4	1.1
13	Appearance	4.3	0.9	3.5	1.3
14	Education	4.8	1	4.2	0.9

Figure 4.4 Summary of Native Speakers' Attitude Toward the Hindi-Accented and the Mandarin Accented English.



CHAPTER 5.

CONCLUSION

This chapter draws a conclusion based on the results and discussion proposed in the previous chapter. Section 5.1 presents a summary of the key findings of the present research, followed by some pedagogical implications. Section 5.2 discusses the limitations of the present study and provides some suggestions for future research.

5.1. Major Findings and Pedagogical Implications

The primary objective of the current study was to see if there was a significant difference between the intelligibility of the two different L1-accented speeches (the Hindi-accented and the Mandarin-accented English). This study also aimed to examine the frequent errors and the reasons for them. Lastly, Korean learners' attitude toward the two different L1-accented speeches was an additional concern for the study. In order to answer these research questions, the word transcription task and the post interview for the intelligibility test and the surveys were carried out with the Korean learners of English and the native speakers. The key findings of the present study can be summarized as follows.

First, for the Korean learners, the Mandarin-accented English was significantly less intelligible than the Hindi-accented English. Similarly, the Mandarin-accented English turned out to be less intelligible than the Hindi-accented English for the native speakers, too. The higher intelligibility scores of the Hindi-accented English can be probably attributed to the accent familiarity factor. It was revealed from the nationality identification task and the post interview that the Korean learners and the native speakers guessed the nationality of the Hindi-accented speaker more accurately and had been more exposed to Indian English than the Chinese English. This result accords with that of previous study (Butler, 2007; Flowerdew, 1994; Gass & Varonis, 1984; Smith & Bisazza, 1982) which concluded that accent familiarity played a major role for non-native listeners to comprehend English speeches spoken by non-native speakers of English.

Secondly, the error analysis showed that word familiarity factor also played a significant role for Korean learners, compared with the native speakers, to identify the words. This result is in line with previous studies (Bundgaard-Nielson et al, 2010, 2012; Hadman, 2014) that suggested that listeners' word familiarity had close relationship with vocabulary size. The error analysis also presented mixed results about the LFC suggested by Jenkins (2000). With respect to the dental fricatives which belong to the non-core features, phonetic deviations of the dental fricatives did not lead to misunderstandings for Korean learners, which supports the results of the previous studies (Jenkins;2000, 2009, Walker;2010). It is, however, worth noting that as for some core consonants of the LFC, mixed results have been produced. For example, the pronunciation of /w/ as [v] which is one of the typical characteristics of the Hindi-accented English was found to be intelligible

by both the Koreans and the native speakers. On the other hand, the articulation of /t/ as [t] led to severe misunderstanding, especially for the Koreans. It was also found that the pronunciation of /h/ as [x] which is the common pronunciation feature of Chinese speakers turned out to be unintelligible for both the Koreans and the native speakers.

Finally, it was found that the Korean learners had negative attitude towards the two L1-accented speeches, giving relatively high scores on ‘unfamiliarity’, ‘anxiety’, and ‘likability’. This is contrary to the results of the native speakers that gave better appraisals of the Hindi-accented English regarding ‘easiness’, ‘likability’, and ‘familiarity’. This results support the previous studies (Chiba, Matsuura and Yamamoto, 1995; Kachru and Smith, 2009) which concluded that intelligibility is closely related with familiarity with varieties of English.

These findings can suggest some pedagogical implications to the current English education. In order for Korean learners to improve intelligibility of the various L1-accented English varieties, two points are worth mentioning: word familiarity and accent familiarity.

Firstly, since vocabulary size was found to be significant for intelligibility, it is a reasonable recommendation for English teaching to combine listening tasks with vocabulary building to improve intelligibility.

Secondly, as for accent familiarity, teachers and students in Korean should realize that besides native speaker English, there are also other varieties of English which have their own phonological features. Raising awareness of English as a Lingua Franca would be a first step toward the change. Specifically, the typical phonological characteristics of Indian and Chinese English should be introduced to Korean students because the speakers from

the two nationalities are the ones who Korean students are highly likely to encounter in international contexts in the future.

5.2. Limitations and Suggestions for Further Research

This study presented some clear findings on intelligibility of Hindi- and Chinese-accented English by Korean high school students and their attitude toward the English varieties' accents from an English as a Lingua Franca (ELF) perspective, but there exist several limitations.

Firstly, further research needs to deal with students with different proficiency levels. Since this study focused on high school students with an intermediate to advanced level of English proficiency, other studies should investigate the effects on intelligibility of different academic levels.

Secondly, another limitation lies in the measure used for intelligibility. Most of all, the binary measure based on a phonemic transcription has qualifications. Further studies need to integrate the binary measure with other methods of measuring intelligibility such as subjective measures. Additionally, since the sample size of the speakers ($n=1$ for each variety) was too small, it requires caution to make generalization of the findings.

Thirdly, further studies need to employ different materials and tasks including spontaneous conversations to provide useful comparisons to the current study's findings. In other words, an investigation of naturally occurring speeches including a wide variety

of phonetic features would help reveal factors that might affect intelligibility outside the controlled setting.

Fourthly, for more valid error analysis, word familiarity should have been measured in advance. For instance, after the intelligibility test, listeners could have been asked to rate their familiarity with the 48 words, which could lead to more exact statistical analysis.

Lastly, the current study was the first study to examine intelligibility of Hindi- and Chinese-accented English by Korean high school students and their attitude toward the English varieties' accents from an English as a Lingua Franca (ELF) perspective. Therefore, more research on this topic which compensate for the limitations mentioned above need to be conducted in the future.

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APPENDIX A.

Intelligibility Test & Attitude Survey

Thank you for participating in the survey. This survey was made for my Master's Degree thesis. Research question is "". Your answers will greatly help me compare Korean students' and native speakers' intelligibility and attitudes toward non—native speeches. This survey will be only used for this thesis, and your personal information will not be used for other purpose.

Instructions:

You will hear one audio sample. After listening, you will have some time to fill in the answers.

There are two kinds of tasks:

- 1) First, fill in the blanks according to the recording you hear.
- 2) In the second task, on a scale from 1 to 7, circle a number that best describes your view. The number 1 means 'strongly disagree x' and the number 7 means 'strongly agree x'. There are 14 scales for the sample. You are also asked to describe the speaker in your own words, using the empty space provided.

Background Information *(for native speakers only)*

- (1) Name: _____
- (2) Nationality: _____
- (3) Native Language: _____
- (4) Age: _____
- (5) Sex(circle): male female
- (6) Have you ever lived in countries where English is used as a second or foreign language?
 - [a] If yes, which countries? _____

 - [b] how long? _____

Task #1

1. _____ Stella.
2. Ask _____
_____:
3. Six _____ snow _____,
_____ slabs _____ blue _____.
4. and maybe a _____
_____.
5. We also need a small _____ and a _____
_____.
6. She can scoop _____
_____.
7. and _____ go _____
_____.

Task #2

Please assess your feeling toward the accent you have obtained. According to the degrees of agreement, check the most appropriate response.

	1 (Strongly disagree)	2	3	4	5	6	7(Strongly agree)
1	It is easy for me to understand English with this accent.						① ② ③ ④ ⑤ ⑥ ⑦
2	I like English with this accent.						① ② ③ ④ ⑤ ⑥ ⑦
3	I think English with this accent is a little funny.						① ② ③ ④ ⑤ ⑥ ⑦
4	I am not familiar with English with this accent						① ② ③ ④ ⑤ ⑥ ⑦
5	English with this accent makes me anxious.						① ② ③ ④ ⑤ ⑥ ⑦
6	I think the speaker is honest.						① ② ③ ④ ⑤ ⑥ ⑦
7	I think the speaker is pleasant.						① ② ③ ④ ⑤ ⑥ ⑦
8	I think the speaker is sophisticated.						① ② ③ ④ ⑤ ⑥ ⑦
9	I think the speaker is credible.						① ② ③ ④ ⑤ ⑥ ⑦
10	I think the speaker is industrious.						① ② ③ ④ ⑤ ⑥ ⑦
11	I think the speaker is determinate.						① ② ③ ④ ⑤ ⑥ ⑦
12	I think the speaker is smart.						① ② ③ ④ ⑤ ⑥ ⑦
13	I think the speaker is handsome.						① ② ③ ④ ⑤ ⑥ ⑦
14	I think the speaker is well-educated.						① ② ③ ④ ⑤ ⑥ ⑦

Describe the speaker in your own words

APPENDIX B.

Listening Script & Phonetic Transcriptions of the Speeches

<Listening Script>

Please call Stella. Ask her to bring these things with her from the store: Six spoons of fresh snow peas, five thick slabs of blue cheese, and maybe a snack for her brother Bob. We also need a small plastic snake and a big toy frog for the kids. She can scoop these things into three red bags, and we will go meet her Wednesday at the train station.

<Phonetic Transcriptions of the Speeches>

<p>[plɪs kəl stɛlə ask hɜ tu bɪŋ dɪz tɪŋks vɪt hɜ frʌm ðə stɔ: sɪks spʊnz ɒf frɛʃ sno pi:z faɪf θɪk slæbz ɒv blu tʃi:z æn meɪbi ə snæk ɒv snæk fɔr ɜ brʌðər bɒb vi əlsə nɪə smɔl plæstɪk sneɪk ændə bɪg tɔɪ frɔ:ɡ fɔr ðə kɪdz ʃi kæn skʊp dɪz tɪŋz ɪntu: θri red bægz æn vi vɪl go mɪt hɜr vɛnzdeɪ æt tʃə tɹeɪn steɪʃən]</p>	<p>[p^hris kɔ: stɛn:ə ask hɜ tu bɪŋ dɪs sɪns wɪs xɜ frɔm ðə stɔ: sɪks spūns ɒf frɛʃ sno pi:s faɪf θɪŋ slæbz ɒf blu tʃi:s ənə meɪbi ə snæk fɔ rə brɒðə bɒb vi vɔlso nɪ:d ə smɔl plæstɪk sneɪk æn ə bɪk^ɪ t^hɔɪ frɔk fɔ rə kɪdʒ ʃi kæn skʊp dɪz θɪŋs ɪntu θri: rɛd^ɪ bæks ən wi wə go mɪt hɜ wɛnsdeɪ ə də tɹɪn steɪʃən]</p>
Hindi-accented Speech	Mandarin-accented Speech

국문초록

본 연구는 한국 고등학생의 비원어민 영어 화자의 발화에 대한, 구체적으로, 인도인 화자와 중국인 화자의 영어 발화에 대한 발음 용인도 및 태도를 세계어로서의 영어 관점에서 알아보고자 하였다. 이제 영어는 원어민과 비원어민 사이에서의 소통에서 보다는 비원어민 끼리의 의사소통에서 훨씬 더 많이 쓰이고 있다. 이렇게 세계어로서의 영어의 역할이 커짐에 따라 영어 발음 교육의 강조점이 ‘원어민 다움’에서 ‘발음 용인도’ 중심으로 옮겨왔고, 이에 따라 비원어민 영어 화자의 발화에 대한 발음 용인도와 태도에 관한 연구가 활발하게 진행되어오고 있다. 하지만 아직 한국인 영어학습자들을 대상으로 비원어민 영어 화자의 발화에 대한 발음 용인도와 태도를 세계어 관점에서 탐구한 연구가 거의 없는 실정이다. 따라서 본 연구는 크게 (1) 한국인 고등학교 영어학습자들이 비원어민 영어 화자의 발화 (인도인 영어 화자와 중국인 영어 화자)에 대한 발음 용인도에서 차이를 보이는지, (2) 발음 용인도를 저해하는 요인이 무엇인지, (3) 한국인 고등학교 영어학습자들이 두 가지 비원어민 영어 화자의 발화에 대해 어떠한 태도를 보이는 지와 같은 연구문제를 상정하였다.

본 실험은 총 42명의 한국인 영어학습자와 비교집단으로서 12명의 영어 원어민 화자들을 대상으로 진행하였다. 참여자들은 두 집단으로 나뉘어 각각 인도인 영어 화자와 중국인 영어 화자의 발화를 듣고 발음 용인도 및 태도

실험에 참여하였다. 발음 용인도 실험과 태도 설문지 작성이 끝난 후에는 사후인터뷰가 진행되었다.

실험 결과, 다음과 같은 유의미한 결과를 발견할 수 있었다. 첫째, 한국인 영어학습자들은 중국인 영어 화자의 발화 보다 인도인 영어 화자의 발화를 훨씬 더 잘 이해하였다. 둘째, 오류분석을 통해서도 두 가지 결과가 도출 되었다. (1) 단어에 대한 친숙함과 영어의 변이형에 대한 친숙함이 발음 용인도와 밀접한 관련이 있다. (2) Jenkins(2000)가 제시한 *Lingua Franca Core* 에 대해서는 혼재된 결과가 나왔다. 셋째, 한국인 영어학습자들은 인도인 영어 화자의 발화와 중국인 영어 화자의 발화 모두에 대해서 매우 부정적인 태도를 보였다. 이는 인도인 영어 화자의 발화에 대해서는 긍정적인 태도를 보인 영어 원어민 화자의 결과와는 상반된다.

이러한 연구결과는 한국인 영어 학습자들이 세계어로서의 영어 사용자로서 다양한 영어변이형에 대한 발음 용인도를 높이고 나아가 긍정적인 태도를 갖추기 위해 강화된 어휘학습 뿐만 아니라 영어변이형에 대한 인식 고취 및 음운적 특징에 대한 수업의 중요성 및 필요성을 제시한다.

주요어: 세계어로서의 영어, 발음 용인도, 언어 태도, 한국 고등학생

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